

What is claimed is:

1 1. A photolithography processing system including:
2 a table positioned near a loader, where a carrier is positioned, for
3 supporting a wafer that is being transported by a robot;
4 a plurality of illumination tools for illuminating a surface of the wafer
5 positioned on the table;
6 a camera for taking pictures of the surface of the wafer; and
7 a controller for controlling operations of the robot, the plurality of
8 illumination tools and the camera and for detecting the presence of impure
9 matters on the surface of the wafer.

1 2. The photolithography processing system as claimed in claim 1,
2 wherein the plurality of illumination tools are singular or plural lasers,
3 ultraviolet lamps, or a combination of the two.

1 3. The photolithography processing system as claimed in claim 1,
2 wherein the camera is made of a charge-coupled device.

1 4. The photolithography processing system as claimed in claim 1,
2 wherein the plurality of illumination tools comprise:
3 a plurality of first illumination tools positioned laterally at different
4 heights to illuminate the surface of the wafer at various predetermined angles
5 of incidence; and
6 a second illumination tool to illuminate the surface of the wafer
7 vertically from above the wafer on the table.

1 5. The photolithography processing system as claimed in claim 4,
2 wherein the plurality of first illumination tools are positioned to have an angle
3 of incidence greater than 0° and less than approximately 70°.

1 6. The photolithography processing system as claimed in claim 4,
2 further comprising a half-mirror positioned between the camera and the wafer
3 and apart from the angle of incidence of the plurality of first illumination tools,
4 wherein the second illumination tool is positioned to illuminate the surface of
5 the wafer through the half-mirror.

1 7. The photolithography processing system as claimed in claim 4,
2 wherein the second illumination tool is positioned around the camera.

1 8. The photolithography processing system as claimed in claim 7,
2 wherein the second illumination tool is a plurality of second illumination tools.

1 9. The photolithography processing system as claimed in claim 1,
2 wherein the controller controls luminous intensity and angle of incidence
3 according to an illumination control signal.

1 10. The photolithography processing system as claimed in
2 claim 9, wherein the first illumination tools and the second illumination tools
3 comprise:

4 the first illumination tools positioned on both sides of the table to allow
5 various changes in height for illuminating at an angle of incidence; and the
6 second illumination tool vertically illuminating the surface of the wafer from
7 the top of the table.

1 11. The photolithography processing system as claimed in
2 claim 10, the controller further comprising:

3 elevating means to slide up or down the first illumination tools in
4 response to an applied illumination control signal; and
5 a luminous intensity unit to control luminous intensity by varying a
6 value of a resistance connected in series with the power source that is
7 connected to the first and second illumination tools in response to other
8 applied illumination control signals.

1 12. The photolithography processing system as claimed in
2 claim 10, wherein the plurality of first illumination tools are positioned to have
3 an angle of incidence greater than 0° and less than approximately 70°.

1 13. The system as claimed in claim 1, wherein the table is able to
2 rotate in response to the control signals from the controller to thereby rotate
3 the position of the wafer in response to angles of incidence of the first and
4 second illumination tools.

1 14. The system as claimed in claim 1, wherein the table is
2 installed to allow lateral or longitudinal motion.

1 15. A method of a photolithography processing system
2 comprising:

3 illuminating a surface of a wafer with first and second illuminating
4 tools;

5 taking pictures of the surface of the wafer with a camera while the
6 surface of the wafer is being illuminated;

7 receiving a signal from the camera in a controller;

8 detecting a presence of particles on the surface of the wafer with the
9 controller; and

10 transporting the wafer to the process-performing or cleaning position
11 according to whether particles are detected on the surface of the wafer.

1 16. The method of a photolithography processing system as
2 claimed in claim 15, wherein the illuminating of the surface of the wafer
3 comprises:

4 positioning a plurality of first illumination tools at varying lateral heights
5 relative to the table to illuminate the surface of the wafer at predetermined
6 angles of incidence; and

7 positioning the second illumination tool to illuminate the surface of the
8 wafer vertically from above the wafer on the table.

1 17. The method of a photolithography processing system as
2 claimed in claim 15, wherein the taking of pictures of the surface of the wafer
3 comprises:

4 obtaining a first image while the first illumination tools are maintained
5 in an 'on' position and the second illumination tool is maintained in an 'off'
6 position;

7 obtaining a second image while the first illumination tools are
8 maintained in an 'off' position and the second illumination tool is maintained
9 in an 'on' position; and

10 forming a multi-dimensional image by combining the first and second
11 images.